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ABSTRACT

The purpose of this project was to determine the effectiveness of a pilot element of a statewide delivery system for career education as a method for preparing secondary teachers to be effective agents of world of work economic education information dissemination and attitudinal change. The primary objectives were: (1) To develop a pilot element of a statewide delivery system for career education; (2) to develop, produce, and evaluate a teacher in-service training system utilizing audiovisual components; and (3) to develop an implementation program. Procedures and activities for the two project phases are described in the report. Phase 1 involved the development of the pilot delivery system while Phase 2 was concerned with the implementation and evaluation. A quasi-experimental research design was employed with a sample of 30 teachers. It was found that pupils of teachers participating in the program did not evidence more understanding of the world of work, but did experience a greater increase in positive attitudes toward productivity and motivation than did pupils of nonparticipating teachers. These findings suggest that project objectives were met and that an effective delivery system can be developed. Appended to the report are materials related to the in-service program.
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ED130145

DEVELOPMENT AND EVALUATION OF A PILOT ELEMENT IN A STATEWIDE CAREER EDUCATION DELIVERY SYSTEM

Submitted to

THE DIVISION OF OCCUPATIONAL RESEARCH AND DEVELOPMENT

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By

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October, 1975

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Acknowledgements

Researching, developing, and evaluating new approaches to the dissemination of world of work economic education to young people is a high priority for the Manpower Institute and the Center for Economic Education of North Texas State University. This study is based on the firm belief that an understanding of how the economy functions from the standpoint of the worker is critical to successful labor-force participation. We are grateful for the support of the many who concur in this belief.

We wish to express our appreciation to our staff and collegues at North Texas State University and to the public school teachers and stuents who participated in the development and evaluation of the "I(t) Work(s)" Pilot Element in a Statewide Career Education Delivery System. This project was funded by the Texas Education Agency, and we are especially grateful to Ray Barber and to Oscar Millican of the Division of Occupational Research and Development for their counsel and unfailing support of our efforts.

We believe that the "I(t) Work(s)" System can provide students with the world of work economic understanding which is critical to the successful interrelationship between the individual and the economy in a free society. To this end, we dedicate our efforts.

Statement of the Problem

The purpose of this study is to determine if a pilot element of a statewide delivery system for career education is an effective and efficient method of preparing secondary teachers, throughout a range of disciplines, to be effective agents of World of Work Economic Education information dissemination and attitudinal change.

Background and Significance of the Problem

The majority of students in secondary education today are involved in essentially college preparatory programs, although only 20 percent of these students will ever complete a four-year degree. The U. S. Department of Labor estimates that by 1980 only 20 percent of the jobs available will require a college education. On the other hand, technology continues to increase the complexity of occupational society. The new occupations which are being created by this technological increase and change require new skills and knowledge. Thus, the relationship between education and work inevitably becomes a closer one.

Former U. S. Commissioner of Education, Sidney P. Marland, in a speech before the National Association of Secondary School Principals in Houston, Texas on January 23, 1971, expressed his concern for the methods employed by those persons preparing young people for future careers by asking if they were going to continue to preserve practices of traditional education when these practices were clearly not adequately equipping over half of the nation's young persons for what the future held.

Kenneth B. Hoyt, Associate Commissioner for Career Education, U. S. Office of Education, in remarks prepared for the Governor's Conference on Human Resources Development in Austin, Texas on November 19, 1974, stated that "for years our educational institutions have operated under the false assumption that the best way to prepare youth for the world of work is to lock them up in a schoolhouse and keep them away from the world. The business-labor-industrial community has operated under a false assumption that responsibility for readying youth for entry into the world of work must rest squarely on our educational institutions. As a result, the world of schooling and the world of work have been two quite different worlds."[8]

In 1971, the U. S. Commissioner of Education proposed that the entire educational effort be reordered around a new concept of "career education" with the goal of providing for each student completing twelve years of schooling the skills to either enter higher education or to enter useful and rewarding employment. He noted that current educational institutions are organized around three basic structures: college preparatory education, vocational education, and general education. Maintaining such a rigid division of educational programs seems to imply that students must make a choice as to which type to follow. The commissioner, however, asserts that these choices should not have to be made. "Our thought and our practice about education should at last be integrated. The result of that integration should be called career education."

Separate research studies by Herbert S. Parnes[13] and Jerald G. Bachman[3] indicate that public school teachers and their students have an inaccurate understanding of income determinants and present and future

job markets. Perhaps even more significantly, they have negative attitudes toward vocational-technical job activities. These inaccurate perceptions and negative attitudes stand against these facts:

1. In a market system, income and productivity are inextricably related.
2. Changes in the job market "mix" are accelerating at exponential rates.
3. Unskilled jobs are disappearing rapidly.
4. The majority of pupils currently enrolled in public schools will find jobs which are classified vocational-technical.

Further compounding the problem is the nationwide shortage of public school counseling programs. In its 1968 General Report, the Advisory Council on Vocational Education reported that only about 50 percent of American high schools provided any form of vocational guidance. In general, public schools do not disseminate the accurate data needed by students to make rational vocational choices.

In order to correct this deficiency in understanding and to alter the negative attitudes toward vocational-technical types of employment, all teachers, not just counselors, must be made disseminating agents of World of Work information and catalytic agents of attitudinal change toward vocational-technical activities.

A study conducted from November, 1971, through May, 1973, by William A. Luker, Lewis M. Abernathy, Watt L. Black, Floyd H. Jenkins, and Darwin D. Talafuse[10] found that secondary school teachers throughout a range of disciplines could be made effective agents of manpower-economic information.

At a summer institute and several in-service workshops conducted personally by Abernathy and Luker, World of Work Economic Education information

was disseminated to secondary school teachers. The results of the program were tested by measuring the conative and cognitive changes in the students of the participating teachers. It was found that pupils of teachers participating in a workshop or the institute experienced significantly greater increases in knowledge of the World of Work than pupils of teachers who had not participated. Further findings were that positive attitudes toward nonprofessional work modes were generated and there were no significant differences between the conative and cognitive performances of pupils taught by summer institute participants and those taught by in-service workshop participants.

As a result of the above study, it is now known that teachers can be made agents of World of Work Economic information dissemination if they are trained in an institute or through in-service workshops and that the pupils of these teachers will receive measurable benefits from this training. This personal training method, however, is expensive, tedious, and inefficient; furthermore, it could not be employed over a wide enough area to bring about any significant change in overall student understanding. Thus, the major thrust of this study is to determine if favorable results can be achieved through the use of an efficient multi-media statewide delivery system. If the results of this study are favorable, large numbers of teachers can be trained at a reasonable cost and over a wide area.

Related Research

T. Adamine and H. G. Heines[1] developed an experimental forced-choice occupational-preference inventory. The purpose of the inventory was (1) to

help the pupils analyze their occupational interests and (2) to gain information for teachers, counselors, and curriculum planners concerning pupils' attitudes toward relatively specific elements of work.

A study was conducted by Linda Ann Alexander[2] to determine the degree to which high school students in Alabama had developed an understanding of the basic concepts of economics. Results indicated that both economic understanding and attitudes were related to personal data but that the higher the level of understanding, as measured by the TEU, the greater the consistency of attitude.

Samuel M. Burt[4] studied the relationship between vocational-technical training programs and economic development in Arkansas. He found that the manpower requirements of Arkansas are being poorly met by the present vocational-technical education system. He estimated that 70 percent of the entry-level job opportunities could be handled by an industrial arts or general education background, but of the 36,000 graduates and dropouts, only 2,000 had such a background. He cited the need for an increase in the programs providing industrial arts education and work orientation as well as basic economic education in the public schools.

A study conducted by Melvin A. Clark[5] showed that integrating economic concepts into other fields of teaching could be quite successful. An experimental group of students in a typing class used specially prepared economic materials for timed writings. When compared to a control group of students, the experimental group showed a significant gain in economic achievement.

The purpose of Robert Darcy and Phillip Powell's project[6] was to help schools prepare young people for more effective participation in a changing

economy and the world of work. A major hypothesis of the experiment was that economic and manpower education would "make a difference" with respect to the attitudes, understanding, and behavior of young people exposed to the instruction treatment. To achieve the goals of the project, an experimental course in manpower and economic education was formulated and integrated into the curriculum of eight Ohio secondary schools. At the end of the field test of the experimental course, it was revealed that students' manpower and economic understanding was improved and changes in students' attitudes were induced. Furthermore, the students showed a high level of interest in the subject matter, and the school dropout rate was lowered.

William V. Hemmer[7] focused his attention on the construction of an effective scale in economics and a comparison of affective and cognitive changes in twelfth-grade students from a sample of forty-six New York State public schools. Students were pre- and post-tested with affective and cognitive instruments, namely, the specially constructed economic attitude scale and the SRA of Economic Understanding (TEU). The findings of the research indicated that, as affective and cognitive learning took place, the correlation between scores on the affective and cognitive instruments increased. Thus, as knowledge and understanding of the discipline increased, the students' attitudes toward economic problems converged toward the consensus of the economists, whose opinions were used for effective comparison. The greater the teacher's agreement with the opinions of the economists, the greater the gains of the students tended to be on both the affective and the cognitive instruments.

William E. Mauberry s studies[11] focused on the effects of perceived

teacher attitudes in relation to students' achievement. His findings indicate that the attitude exhibited by the teacher toward the material taught exerts more influence on student achievement, as it is typically measured, than do teacher attitudes toward the students as individuals.

Anne Mayhew found in her study entitled "Education, Occupation and Earnings"[12] that the high degree of association between the level of educational attainment and earnings is attributable in large part to differences in earnings within occupations. While entry into many jobs in the professional and managerial fields requires college education, for a large part of the population occupational distribution is largely independent of years of schooling. Even for those who complete high school, half or more of their earnings advantage is caused by higher earnings within occupations which apparently were also open to those who did not complete high school. To the extent that staying in school, at least through high school, results in increased earnings, it does so because the high school graduate can earn more within an occupation than can a nongraduate not because the occupation itself is attainable through the high school diploma.

Herbert Parnes,[13] working under a research contract for the U. S. Department of Labor, concluded a longitudinal study of the educational and labor market experience of male youth in 1970. The study included a national sample of 5,000 males between the ages of fourteen and twenty-four. Sixty percent wanted to obtain at least four years of college, while 70 percent desired at least two years of college. Twenty-five percent had not decided on a work career, but 50 percent indicated that they wanted to be in professional or technical occupations by age thirty. Given the occupational distribution of job opportunities, it is virtually

certain that many of these youth will not realize their aspirations. The study urges a greater effort to acquaint students with the dimensions of the World of Work.

Program Objectives

The primary objectives of this program are as follows:

1. To develop a pilot element of an effective and efficient statewide delivery system for career education.
2. To develop, produce, and evaluate an in-service training system consisting of audio-visual components, teacher and student-programmed materials, topic monographs on each of the four key concepts, a teacher's guide, and a workshop leader's guide to be used for teachers to train other teachers in the use of the total system and to develop an implementation program whereby the system can be made a separate course of study, be integrated into other courses of study, or be presented in a modular form.
3. To identify, define and synthesize thirty basic career and World of Work education concepts.
4. To foster the teaching of basic career education concepts in the public schools.
5. To encourage teachers to relate subject matter to labor-force participation.
6. To improve the understanding and attitudes of public school teachers and students toward vocational and technical work modes.

Methodology

A. Procedures and activities for the project were conducted in two phases.

1. Phase I--September, 1973, to August, 1974--Development of pilot delivery system. After thirty career education or World of Work education concepts were identified and defined, key concepts were selected as points of major emphasis in the pilot system. These key concepts were integrated into a ten-hour staff-development program; a significant amount of flexibility was possible when the program was divided into expandable segments, each two and a half hours long. The components which were developed by Luker and Abernathy and teacher participants in consultation with the National Institute of Television include topic monographs on each of four key concepts, twelve audio-visual sections, programmed material on basic World of Work Economic Education concepts, a workshops leader's guide, and a teacher's guide.

   Various components of the pilot system have been evaluated by key educators in four states, three regional, and one national education workshop. In addition, the entire delivery system was utilized as the basis of a three-week National Leadership Workshop in World of Work Economic Education held at North Texas State University during the summer 1974. Based on system evaluations resulting from this workshop, revisions were made in the system and additional material was developed.

2. Phase II--September, 1974 to June, 1975--Research and Experimental Phase. Phase II involved the implementation and evaluation of the

system developed in Phase I, the purpose of which was to assess the impact of the system against a success criterion of increased pupil understanding and perception of the World of Work. Phase II, which was conducted by Luker and Abernathy, involved the assessment of the measurement instruments, the design of the research, and the implementation and testing of the program in the classroom by selected participants of the in-service and summer-institute programs. This was done through three seminars conducted in the three regional Educational Service Centers selected for the project. The primary purpose of this final phase was to measure the impact of the program on the pupils of participating teachers.

B. The critical evaluation of the entire project, centered in Phase II, involved the testing of two hypotheses.

1. A training program in World of Work Economic Education will produce significantly better understanding of the world of work in the pupils of teachers enrolled in a WOWEE program than will be found in pupils of teachers not trained in a WOWEE program.
2. A training program in WOWEE will produce significant attitudinal changes toward the world of work in pupils of teachers enrolled in the program. That is, pupils of teachers trained in WOWEE programs will have more positive attitudes toward nonprofessional work modes than pupils of teachers not trained in a WOWEE program.

The Research Design. The research design is quasi-experimental, involving a convenience random sample schematically outlined as follows:

Random Experimental	E_1	X O
	E_2	X O
	E_3	X O
	E_4	X O
	E_5	X O
	.	
	.	
	.	
	E_{15}	X O

Random Control	C_1	O
	C_2	O
	C_3	O
	C_4	O
	.	
	.	
	C_{15}	O

The Population. There were eighty secondary teachers in Educational Service Center Regions IX, XIV, and XV who volunteered to participate in an in-service workshop or the summer institute.

The Sample. Thirty teachers from the three regions were selected and split randomly into experimental and control groups. Once a teacher was assigned to the experimental or control group, one class taught by that teacher was selected randomly to participate in the experiment. The total sample size was N = 30.

The Variables. The variables used are described below:

X_1 = Cognitive or conative to the post-test.

X_2 = Experimental or Control.

X_3 = Region XV Educational Service Center.

X_4 = Region XI Educational Service Center.

The Instruments. The reliability and validity of the instruments used were established as follows: In addition to the validation by experts in the field, the reliability and validity of "I(t) Work(s)," the title given the pilot system and instruments, was established by extensive reliability and validity analysis tests, including item analysis and the KR-20 reliability test. The Kuder Richardson coefficients found for the "I(t) Work(s)" instrument were .79 and .87 for the cognitive and conative portions of the test, respectively.

In addition to the item analysis and Kuder Richardson tests, a factor analysis was run on both the cognitive and attitudinal portions of the "I(t) Work(s)" instrument. On the cognitive factor analysis, eight factors were forced and five were revealed which had factor loading of .3 or greater. These cognitive subsets were the market, economic growth, income, cooperation, and productivity. For the conative portion of the "I(t) Work(s)" instrument, again eight subsets were forced on the factor analysis, and again five proved to have factor loadings of .3 or greater. These subsets were the market, motivation, productivity, economic growth, and education and income.

"Were I a Worker," the instrument used for a portion of the measurement of attitudes toward nonprofessional work modes, demonstrated a reasonable level of construct validity in the Integrative Manpower Economic Education Experiment in Curricular Change study. This instrument, which was used to measure attitudinal change, produced a partial beta coefficient of 19.093, indicating that the instrument did in fact measure attitudinal change with a high degree of significance. Further work toward the validiation of

the "Were I a Worker" instrument, performed by the instrument developers at the University of Florida College of Education, was reported by Michael King in a study of the correlates of vocational bias in elementary students.[9] The instrument was developed and submitted to educators in the state of Florida. The recommendations of these educators were incorporated into a revision of the instrument, and reliability tests were run which yielded reliability coefficients ranging from .73 to .84.

Detailed Description of Data Collection. At the conclusion of each in-service workshop, the participating teachers were cognitively and conatively post-tested. In the spring semester of 1974, after the completion of the in-service workshops, the experimental teachers were instructed to begin the utilization of pedagogical skills and conative insights acquired as a result of the workshops. The control teachers were given no instruction utilizing the "I(t) Work(s)" delivery system. At the end of the spring semester, the students of the participating teachers were post-tested for for cognitive and conative change.

Analytical Methodology. A multiple regression was the basic analytical device employed. The model was $Yc = a + b_1X_1 + b_2 x_2 \ldots b_N x_N + E$. The critical statistic in the analysis was the partial absolute beta coefficient of the experimental variable. The problem of missing data points in control variables was handled by substituting the mean of the series and creating a dummy variable which accounted for variation attributable to missing data.

Analysis of Data

The first hypothesis to be tested was that a training program in World of Work Economic Education will produce significantly better

understanding of the world of work in pupils of teachers enrolled in the "I(t) Work(s)" program than in pupils of teachers not trained in the "I(t) Work(s)" program.

The multiple-regression analysis of pupil cognition, as measured by the "I(t) Work(s)" questionnaire, generated the data listed in Table 1. Variable X_1 was the cognitive total score.

The variable critical to the test of Hypothesis I, X_2 Experimental Control, was not statistically significant at the .01 level (P=.7653). This means that everything else being equal, there were no significant differentials between the World of Work understanding of pupils taught by teachers participating in the "I(t) Work(s)" program and pupils of teachers not participating in a "I(t) Work(s)" program.

The second hypothesis to be tested was that a training program utilizing the "I(t) Work(s)" system would produce significant attitudinal changes toward the world of work in pupils of teachers enrolled in the program. That is, pupils of teachers trained in "I(t) Work(s)" programs will have more positive attitudes toward nonprofessional work modes than pupils of teachers not trained in such a program. The data needed to test this hypothesis, found in Tables 2, 3, 4, and 5, are derived from the conative portion of the "I(t) Work(s)" instrument, and Table 5 also contains information derived from the "Were I a Worker" instrument.

The variable critical to the testing of Hypothesis II was varible X_2 in both Tables 2 and 5. The Experimental Control variable X_2 was not statistically significant at the .1 level in either case (P=0.8241 in Table 2 and P=.8755 in Table 5).

The experiment did produce significant positive attitudinal changes in two major conative subsets. The critical variable in measuring this

change was X_2 in Tables 3 and 4. Attitudes changes were significant at the .01 level for motivation (Table 3, P=.0109), and attitude change was significant at the .1 level for productivity. (Table 4, P=.0606). This means that pupils of teachers trained in an "I(t) Work(s)" program showed more positive attitudes toward motivation and productivity than pupils of teachers not participating in an "I(t) Work(s)" program.

TABLE 1

REGRESSION COEFFICIENTS ON PUPIL COGNITION OF "I(T) WORK(S)" INFORMATION

Variable	Description	Partial Beta	F	P
X_2	Experimental Control	.13148	.0892	.7653
X_3	San Angelo I.S.D.	.43340	.5794	.4467
X_4	Fort Worth I.S.D.	-1.21405	7.5311	.0062

Degrees of Freedom 642

N=642

TABLE 2

REGRESSION COEFFICIENTS ON PUPILS' ATTITUDES TOWARD WORLD OF WORK AS MEASURED BY SELECTED CONATIVE QUESTIONS ON THE "I(T) WORK(S)" QUESTIONAIRE.

Total Conative Score

Variable	Description	Partial Beta	F	P
X_2	Experimental Control	-.21253	.0495	.8241
X_3	San Angelo I.S.D.	1.98411	2.5778	.1088
X_4	Fort Worth I.S.D.	-3.67959	14.6396	.0001

Degrees of Freedom 641

N=641

TABLE 3

REGRESSION COEFFICIENTS ON PUPILS' ATTITUDES TOWARD MOTIVATION AS MEASURED BY SELECTED CONATIVE QUESTIONS ON THE "I(T) WORK(S)" QUESTIONAIRE.

Variable	Description	Partial Beta	F	P
X_2	Experimental Control	.46246	6.5161	.0109
X_3	San Angelo I.S.D.	-.06961	.1430	.7054
X_4	Fort Worth I.S.D.	-.15483	.4190	.5177

Degrees of Freedom 641

N=641

TABLE 4

REGRESSION COEFFICIENTS ON PUPILS' ATTITUDES TOWARD PRODUCTIVITY AS MEASURED BY SELECTED CONATIVE QUESTIONS ON THE "I(T) WORK(S)" QUESTIONAIRE

Variable	Description	Partial Beta	F	P
X_2	Experimental Control	.28155	3.5336	.0606
X_3	San Angelo I.S.D.	-.25429	2.8031	.0946
X_4	Fort Worth I.S.D.	-.29594	2.2554	.1336

Degrees of Freedom 641

N=641

TABLE 5

REGRESSION COEFFICIENTS ON PUPILS' ATTITUDES TOWARD NON-PROFESSIONAL WORK MODES AS MEASURED BY THE "WERE I A WORKER" QUESTIONAIRE.

Variable	Description	Partial Beta	F	P
X_2	Experimental Control	-1.61983	0.0251	0.8755
X_3	San Angelo I.S.D.	-12.89518	1.0497	0.3154
X_4	Fort Worth I.S.D.	33.76127	10.3873	0.0034

Degrees of Freedom 641

N=641

Findings

The findings of the study are as follows:

1. Pupils of teachers participating in an "I(t) Work(s)" program did not experience significantly greater increases in understanding of the world of work than pupils of teachers not participating in an "I(t) Work(s)" program.

2. Pupils of teachers participating in an "I(t) Work(s)" program did experience significantly greater increases in positive attitudes toward motivation and productivity than pupils of teachers not participating in an I(t) Work(s)" program.

Relationship of the Findings To the Objectives of the Project

These findings suggest that the objectives of the program (see page 8) have been actualized in the following ways:

1. First, the data show that secondary teachers, through a range of disciplines, can be transformed into effective agents of WOWEE information dissemination and attitudinal change, and the task can be accomplished by utilizing a short (ten-hour), inexpensive training program which is relatively teacher free, employing audio-visual equipment and programmed learning and teacher-guide materials.

2. Second, the data suggest that test instruments measuring attitudinal and cognitive changes can be developed and utilized in evaluating these programs and that these evaluations can be extended to the critical arena of measured changes in pupil behavior.

3. Third, the data show that a measurably effective program in World of Work can be developed and implemented using, as its basic cognitive structure, the discipline of economics.

4. And fourth, the data clearly portray the fact that a multiplier cadre of disseminating agents, within the education service-center regions, can be developed.

Recommendations

During the last five years, career education has become the focus of curricular reformers. The obvious notion that formal educational processes should play a vital role in the development of an understanding of the economic process and the role that work plays in the lives of men and women has, at last, transcended the narrow visions of academic and vocational educational traditionalists. That is, this "new" vision of career education, embracing the twin goals of manpower understanding and manpower development, is committed to a pervasive, developmental, and integrative curricular reconstruction which includes such cognitive and conative concepts as the fundamental realities of exponential institutional change, the problems and opportunities presented by institutional dynamism, and the increasing importance of human resources within the framework of this change matrix. While significant cognitive changes were not achieved by this experiment, the goal of achieving cognitive change was to produce attitudinal change, and this was accomplished. This fact leads the principal researchers in this project to believe in the continued potential of the "I(t) Work(s)" system.

Any program designed to produce organic curricular reconstruction, manifested in measurable changes in pupil understanding and attitudes, must produce changes in what teachers and pupils do. And producing changes in what teachers and pupils do demands a program with two critical characteristics:

A. The program must have a delivery system which is effective and efficient

1. To be effective the delivery system must be

a. Cognitive--It must deliver the essential structural elements of the discipline(s).

b. Conative--It must change the attitudes of teachers and pupils so that the discipline is relevant and translatable into languages comprehensible to appropriate constituencies.

c. Methodological--It must give teachers authentic capacities to translate the basic structure into curricular experiences which are comprehensible to all pupil constituencies.

d. Integrative--It must integrate the discipline with other disciplines. Career eudcation cannot be achieved with one or two courses restricted to the level of the senior high school.

2. To be efficient, the delivery system must be characterized by diminishing marginal cost per teacher and pupil.

B. To make any delivery system viable, a support (software) system must be brought to bear that can provide the environmental conditions which, in turn, will allow the system to come "on-line." Any delivery system must be supported by the following kinds of activities:

1. Selling--The program must literally be "sold" to all relevant constituencies, including administrators, teachers, parents, pupils, school board members, and the general public.

2. Institutionalizing--Without institutionalizing, individual participation will be discouraged, crushed, ostracized, and/or eliminated. No program can be successful unless it is a part of

the institutional goal/reward system and unless it creates conditions under which some persons are responsible and rewarded for achieving the program's goals.

3. Reinforcing--Successful programs must reinforce and follow-up with hot lines, trouble-shooting seminars, and so on. Teachers and administrators need to be positively reinforced and supported. Without reinforcement and follow-up, even when goals have been institutionalized, nothing happens.
4. Evaluation--Successful programs must be constantly monitored, tested, and evaluated in terms of the measurable impact they are having on teachers and pupils.

This project has shown clearly that an effective and efficient delivery system can be developed. The two major tasks remaining are the development of (1) an efficient delivery system utilizing existing educational service center regions to train a multiplier cadre of disseminator teachers for World of Work information and (2) a support/software system which will provide the "human" foundation discussed above. These two major tasks lie ahead.

APPENDIX A

PROGRAM SUMMARY

"I(t) Work(s)" Seminars

The ten-hour seminars conducted in three Educational Service Centers were organized into four sections consisting of the nineteen modules listed below:

SECTION I --

Module I	Introduction and Marketability
Module II	Employability
Module III	Introduction to Workshop
Module IV	Break
Module V	Marketability
Module VI	The Market
Module VII	Review and Reinforcement of Market System

SECTION II --

Module VIII	Relation of World of Work/Economic Education to Curriculum: Identification of Resources

SECTION III --

Module IX	Market Review
Module X	Why Work
Module XI	Income, Social Importance, and Demand
Module XII	Specialization and Interdependence
Module XIII	Break
Module XIV	Change

SECTION IV --

Module XV	Review
Module XVI	Public Goods and Services
Module XVII	Break
Module XVIII	Integrating World of Work/Economic Education Into Curriculum
Module XIX	Review and Finale

APPENDIX B

DESCRIPTION OF ANCILLARY MATERIALS

"I(t) Work(s)" Ancillary Materials

The "I(t) Work(s)" World of Work Economic Education ancillary curriculum materials evolved from the World of Work/Economic Education seminars conducted as part of the development and evaluation of a pilot element of a statewide delivery system for World of Work Economic Education funded by the Division of Occupational Research and Development of the Texas Education Agency. Initially thirty key concepts were identified from ongoing career education pilot projects in Texas. These thirty key concepts were synthesized and incorporated into the "I(t) Work(s)" seminars described in Appendix A.

The specification of content and format for ancillary materials to reinforce the audio-visual components of the pilot system was the contribution of teachers participating in the seminars. Four topic monographs based on teacher-defined needs were written by Lewis M. Abernathy, William A. Luker, and Susan White. A description of these monographs follows:

"I(t) Work(s)" Topic Monographs

The Nutshell: An Introduction To Economics

Topic Outline

I. Introduction

II. The Economic Problem
    A. Scarcity
    B. Factors of Production
        1. Land
        2. Labor
        3. Capital
        4. Entrepreneurship

III. Allocation
    A. Decision Making
    B. Opportunity Cost

IV. Techniques for Solving the Economic Problem
    A. Custom
    B. Authority
    C. The Market

V. The Market System
    A. What and How Much
    B. Efficiency and Power
        1. Competition
        2. Profit

VI. Income Distribution and Motivation

A. Income

B. Productivity

VII. Economic Growth

A. Technological Change

B. Problems of Growth

VIII. Instability

A. Recession

B. Inflation

IX. Annotated Bibliography

X. Benefits of the Market System--A Summation

Instability: The Ups And Downs Of A Market Economy

Topic Outline

I. Inflation
   - A. Consumer Price Index
   - B. Economic and Social Costs

II. Recession
   - A. Problems of Employment
     1. Unemployment
        - a. Frictional
        - b. Structural
        - c. Cyclical
     2. Underemployment
   - B. Problems of Costs
     1. Economic Costs
     2. Social Costs

III. The Causes of Instability
   - A. Aggregate Demand
   - B. Investment--Savings Relationship

IV. Public Policy
   - A. Fiscal Policy
   - B. Monetary Policy

V. Stabilization and Growth
   - A. Spending
   - B. Output

VI. Stagflation

A. Monetarist Theory

B. Economic Power Theory

C. Structural Theory

D. Micro Theory

Change: Economic And Social Dimensions

Topic Outline

I. Introduction

II. Changes in Supply/Demand
   - A. Technology
   - B. Profit

III. Changes in Capital/Labor Mix
   - A. Human Resources Market
   - B. Number and Types of Jobs

IV. The Nature of Change
   - A. Direct Economic Effects
   - B. Indirect Social Effects

V. Problems of Change
   - A. Acceleration of Random Change
   - B. Collective Social Problems

VI. Changing Nature of Work
   - A. Technological Change
   - B. Specialization--Division of Labor
   - C. Interdependence

VII. Preparation for the Future
   - A. Knowledge of Job Markets
   - B. Exploration of Occupations
   - C. Flexibility of Attitudes

Marketability: Career and Life Planning

Topic Outline

I. Introduction

II. The Human Resources Market

A. Supply/Demand: Goods and Services

B. Supply/Demand: Labor

III. Income: Labor Resources

A. Supply/Demand of Resource

B. Productivity of Resource

IV. The Changing World of Work

A. Specialization--Division of Labor

B. Interdependence

V. Why People Work

A. Income

B. Social Value

C. Self-Realization

VI. Decision-Making Technique

A. Definition of the Problem

B. Identification of Goals

C. Consideration of Alternatives

D. Analysis of Consequences

E. Choice of Solution

F. Creation of a Plan of Action

VII. A Beginning Career Plan

A. Job and Occupational Information

B. Self-Awareness

C. Operational Definition of Goals

VIII. Importance of Work

A. Price of Work

B. Value of Work

"I(t) Work(s)" Programmed Materials

Based on the belief that a systematic approach to World of Work Economic Education concepts provides an efficient and effective technique of learning, programmed materials for the basic economic concepts presented in the "I(t) Work(s)" system were developed. These programs provide another learning instrument for further reinforcement and review of the basic themes. These materials consist of the concepts presented in the two monographs previously described in Appendix B: The Nutshell: An Introduction to Economics, and Instability: The Ups and Downs of A Market Economy.

A Teacher's Guide to "I(t) Work(s)"

Two modules in the ten-hour "I(t) Work(s)" seminars involved active teacher participation in designing integrative World of Work lesson plans and activities directly related to the subject area taught by the participant. From these activities evolved a teacher-designed, teacher-written guide to the "I(t) Work(s)" curriculum. A description of the "I(t) Work(s)" Teacher's Guide follows:

A Teacher's Guide to the "I(t) Work(s)" Curriculum

SECTION I--(1) Topic outlines for each of the four monographs in the "I(t) Work(s)" curriculum series. (2) Sample lesson plans complete with performance objectives, suggested assignments, activities, and discussion guides. Each lesson is keyed to both a World of Work/Economic Education theme and to a career education element.

SECTION II--(1) Guidelines for the use of programmed materials and (2) Programmed materials for reinforcement, review, or self-study by students of basic economic concepts.

SECTION III--A series of twenty mini-lesson plans for integration of career education elements into the existing school program. Subject matter areas include English, Mathematics, Social Studies, Art, Physical Education, and others. These lesson plans include resource materials such as scripts, short stories, mathematics problems, and other aids for the convenient integration of career elements and activities into the existing course content.

SECTION IV--Resource materials and bibliographies relating to both economic and career education and an "I(t) Work(s)" Community Resources Packet.

The "I(t) Work(s)" Staff Development Workshop Guide

A leader's guide to the ten-hour teacher-training workshop, which was developed to detail basic economic and career education understandings, includes the following:

1. Complete organizational details and checklists for the workshop.
2. Directions for utilizing the audio-visual components of the "I(t) Work(s)" system.
3. Discussion guides for each of the nineteen modules.
4. Transparencies and instructions for designing integrative World of Work lesson plans.
5. A resources exploration game.
6. Group and individual workshop activities.
7. Assessment instruments.
8. The "I(t) Work(s)" audio-visual presentation script.

APPENDIX C

DESCRIPTION OF THE "I(T) WORK(S)" AUDIO_VISUAL COMPONENT

The "I(t) Work(s)" Audio-Visual Component

The twelve audio-visual sections of the "I(t) Work(s)" system comprise a complete audio-visual presentation of the basic "I(t) Work(s)" themes. The materials were designed particularly for student-teacher appeal through wide use of colorful graphics, student actors, workers discussing their own jobs, and two unique cartoon characters, Ms. Market and Super "E" (entrepreneur), who explain basic World of Work concepts to a high school graduate named George who is seeking entry into the job market. The script for the "I(t) Work(s)" audio-visual component may be found in the last section of the "I(t) Work(s)" workshop guide.

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